

2000 WL 987979

Page 1

(Cite as: 2000 WL 987979 (D.Del.))

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United States District Court, D. Delaware.

ACUSHNET COMPANY, Plaintiff,

v.

DUNLOP MAXFLI SPORTS CORPORATION,
Defendant.

No. CIV. A. 98-717-SLR.

June 29, 2000.

William J. Wade, Esquire of Richards, Layton & Finger, Wilmington, Delaware. Counsel for Plaintiff. Of Counsel: Paul J. Zegger, Esquire, Greg P. Roggin, Esquire, and C. Edward Polk, Jr., Esquire of Pennie & Edmonds LLP, Washington, D.C.

David J. Ferry, Jr., Esquire of Ferry & Joseph, P.A., Wilmington, Delaware. Counsel for Defendant. Of Counsel: David B. Tulchin, Esquire, Robin D. Fessel, Esquire, and James T. Williams, Esquire of Sullivan & Cromwell, New York, New York. Anthony M. Lorusso, Esquire of Lorusso & Loud, Boston, Massachusetts.

MEMORANDUM OPINION

ROBINSON, District J.

I. INTRODUCTION

*1 Currently before the court are two summary judgment motions filed by plaintiff Acushnet Company (D.I.41, 52) and two cross motions for summary judgment filed by defendant Dunlop Maxfli Sports Corporation. (D.I.56, 65) Both plaintiff and defendant manufacture, among other things, golf balls. Plaintiff filed suit against defendant on December 17, 1998 alleging infringement of U.S. Patent Nos. 5,733,428 ("the '428 patent") and 4,389,365 ("the '365 patent"). (D.I.1) The '428 patent teaches a method for forming a polyurethane cover over a golf ball core, while the '365 patent discloses a method and apparatus for stripping molded round cores from a golf ball core mold. Plaintiff amended its complaint

on March 31, 1999 to allege infringement of U.S. Patent No. 5,888,437 ("the '437 patent"). (D.I.10) The '437 patent also teaches a method for forming a polyurethane cover over a golf ball core. Defendant filed a counterclaim for a declaratory judgment that the '428, '437, and '365 patents are not infringed and are invalid. (D.I.14)

Plaintiff is a corporation organized under the laws of Delaware with a principal place of business in Fairhaven, Massachusetts. Defendant is a corporation organized under the laws of Delaware with a principal place of business in Greenville, South Carolina. Defendant is a wholly owned subsidiary of Dunlop Slazenger Group, a United Kingdom Corporation ("Dunlop-UK"). The court has jurisdiction over this matter by virtue of 28 U.S.C. § 1338(a), and venue is proper in this judicial district pursuant to 28 U.S.C. §§ 1400(b) and 1391(c).

II. BACKGROUND

Plaintiff's first motion seeks (1) summary judgment of the validity and enforceability of the '428 and '437 patents and (2) summary judgment that defendant's accused process infringes claim 6 of the '437 patent. (D.I.41) Defendant's cross motion seeks summary judgment of noninfringement of claim 6 of the '437 patent. (D.I.56) Plaintiff's second motion seeks summary judgment of infringement of claims 1-3 of the '365 patent, while defendant's second cross motion seeks summary judgment of invalidity of the '365 patent. (D.I.52, 65) The court shall address each of these motions in turn.

III. STANDARD OF REVIEW

A court shall grant summary judgment only if "the pleadings, depositions, answers to interrogatories, and admissions on file, together with the affidavits, if any, show that there is no genuine issue as to any material fact and that the moving party is entitled to judgment as a matter of law." Fed.R.Civ.P. 56(c). The moving party bears the burden of proving that no genuine issue of material fact exists. See *Matsushita Elec. Indus. Co. v. Zenith Radio Corp.*, 475 U.S. 574, 586 n.10 (1986). "Facts that could alter the outcome are 'material,' and disputes are 'genuine' if evidence exists from which a rational person could conclude that the position of the person with the burden of proof on the disputed issue is correct." *Horowitz v. Federal Kemper Life*

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2000 WL 987979

Page 2

(Cite as: 2000 WL 987979 (D.Del.))

Assurance Co., 57 F.3d 300, 302 n.1 (3d Cir.1995) (internal citations omitted). If the moving party has demonstrated an absence of material fact, the nonmoving party then "must come forward with 'specific facts showing that there is a genuine issue for trial.'" ' *Matsushita*, 475 U.S. at 587 (quoting Fed.R.Civ.P. 56(e)). The court will "view the underlying facts and all reasonable inferences therefrom in the light most favorable to the party opposing the motion." *Pennsylvania Coal Ass'n v. Babbitt*, 63 F.3d 231, 236 (3d Cir.1995). The mere existence of some evidence in support of the nonmoving party, however, will not be sufficient for denial of a motion for summary judgment; there must be enough evidence to enable a jury reasonably to find for the nonmoving party on that issue. See *Anderson v. Liberty Lobby, Inc.*, 477 U.S. 242, 249 (1986). If the nonmoving party fails to make a sufficient showing on an essential element of its case with respect to which it has the burden of proof, the moving party is entitled to judgment as a matter of law. See *Celotex Corp. v. Catrett*, 477 U.S. 317, 322 (1986).

IV. PLAINTIFF'S MOTION FOR SUMMARY JUDGMENT OF VALIDITY AND ENFORCEABILITY OF THE '428 AND '437 PATENTS AND OF INFRINGEMENT OF CLAIM 6 OF THE '437 PATENT AND DEFENDANT'S CROSS MOTION FOR NONINFRINGEMENT OF THE '437 PATENT

*2 In its first motion, plaintiff invokes the doctrine of assignor estoppel to preclude defendant from pursuing its counterclaim for invalidity of the '428 and '437 patents. Plaintiff also seeks summary judgment of infringement of claim 6 of the '437 patent. The court shall address each argument in turn.

A. Assignor Estoppel

Assignor estoppel "prevents one who has assigned the rights to a patent ... from later contending that what was assigned is a nullity." *Diamond Scientific Co. v. Ambico, Inc.*, 848 F.2d 1220, 1224 (Fed.Cir.1988). Courts have applied assignor estoppel to invalidity challenges based on novelty, utility, patentable invention, anticipatory matter, and state of the art. See *id.* The doctrine "prevents the 'unfairness and injustice' of permitting a party 'to sell something and later to assert that what was sold is worthless.'" ' *Mentor Graphics Corp. v. Quickturn*

Design Sys., Inc., 150 F.3d 1374, 1377 (Fed.Cir.1998) (quoting *Diamond Scientific*, 848 F.2d at 1224). Assignor estoppel also bars challenges to patents by parties in privity with the assignor. See *id.* It is undisputed that the inventor of the '428 and '437 patents, John Calabria, assigned his rights to those patents to plaintiff. It is also undisputed that, after assigning his rights to plaintiff, Calabria left plaintiff's employ to work for defendant. At issue, then, is whether Calabria is in privity with defendant, such that assignor estoppel precludes defendant from pursuing its invalidity counterclaim.

To determine whether privity exists, the court must "balance the equities" in light of the act of infringement. See *Shamrock Techs., Inc. v. Medical Sterilization, Inc.*, 903 F.2d 789, 793 (Fed.Cir.1990). The Federal Circuit has explained that:

If an inventor assigns his invention to his employer company A and leaves to join company B, whether company B is in privity and thus bound by the doctrine will depend on the equities dictated by the relationship between the inventor and company B in light of the act of infringement. The closer that relationship, the more the equities will favor applying the doctrine to company B.

Id. A court must evaluate all direct and indirect contacts between the assignor and the defendant. See *Intel Corp. v. United States Int'l Trade Comm'n*, 946 F.2d 821, 838 (Fed.Cir.1991). "What is significant is whether the ultimate infringer availed itself of the inventor's 'knowledge and assistance' to conduct infringement." *Id.* at 839.

This broad test for finding privity, however, must be viewed in light of the facts of the cases in which the test has been enunciated. In the handful of cases finding privity between a defendant corporation and an assignor of the patent-in-suit, the assignor has exercised substantial control over, and/or held considerable financial interest in, the defendant corporation. For instance, in *Shamrock Technologies*, the assignor left the assignee's employ to become the defendant corporation's Vice President of Operations. See *Shamrock Techs.*, 903 F.2d at 794. He also owned 50,000 shares of the defendant corporation's stock. See *id.*; see also *Carroll Touch, Inc. v. Electro Mech. Sys., Inc.*, 15 F.3d 1573, 1579 (Fed.Cir.1993) (assignor was founder, president, principal executive officer, and owner of a controlling interest in defendant corporation). It is also notable that, in finding

2000 WL 987979

Page 3

(Cite as: 2000 WL 987979 (D.Del.))

privity between the assignor and defendant, the court in *Shamrock Technologies* relied upon cases involving assignors who exercised considerable control over the defendant corporation. See *Shamrock Techs.*, 903 F.2d at 793 (citing *United States Appliance Corp. v. Beauty Shop Supply Co.*, 121 F.2d 149, 151 (9th Cir.1941) (privity between assignor and co-developer of infringing device with company they formed to advance their interests in infringing device); *Stubnitz-Greene Spring Corp. v. Fort Pitt Bedding Co.*, 110 F.2d 192, 195 (6th Cir.1940) (privity between assignor and company of which he was principal stockholder, president, and general manager); *Buckingham Prods. Co. v. McAleer Mfg. Co.*, 108 F.2d 192, 195 (6th Cir.1939) (privity between assignor and corporation "over which he had control of policy but lacked voting control"); *Mellor v. Carroll*, 141 F. 992, 993-94 (C.C.D.Mass.1905) (privity found between assignor/other individuals and corporation founded by them to "carry on a business which they would be restrained from carrying on as individuals").

*3 The assignor also exercised considerable control over the defendant corporation in *Intel*. In *Intel*, the assignor of the patent-in-suit was the largest shareholder and chief executive officer of Atmel Corporation ("Atmel"), which enabled him to control that defendant's business and finances. See *Intel*, 946 F.2d at 837-38. Atmel had entered into a joint venture with co-defendants General Instrument Corporation and Microchip Technology Inc. (collectively, "GI/M"). Significantly, the Federal Circuit in *Intel* ruled that the assignor's relationship with GI/M was so extensive that "GI/M's dealings with Atmel are also, in substance, dealings with [the assignor]." *Id.* at 838. Consequently, the court found that the assignor also was in privity with GI/M and estopped both Atmel and GI/M from raising invalidity defenses. *Id.* at 838-39.

Most recently, the Federal Circuit found privity to exist between an assignor company and its wholly owned subsidiary, such that both were precluded from challenging the validity of the patent-in-suit. See *Mentor Graphics*, 150 F.3d at 1379. In *Mentor Graphics*, the assignor exercised "considerable control" over its subsidiary's operations. Indeed, it shared personnel with the subsidiary, approved its budget, and "established their relationship so that [the subsidiary] would have the capital it needed to manufacture the accused devices." *Id.*; see also *Eagle Comtronics, Inc. v. Northeast Filter Co.*, No.

90-CV-573, 1991 WL 247551 (N.D.N.Y. Nov. 22, 1991) (finding privity where assignor left assignee's employ and founded defendant company for purpose of manufacturing accused devices).

The facts of the case at bar are distinguishable from those cases applying the doctrine of assignor estoppel. In each of these cases, the Federal Circuit found privity to exist where the assignor either controlled the corporation in question or had a significant financial stake in the corporation's success. Extending privity in such situations makes sense because it furthers the policy goal of assignor estoppel. That is, it prevents an assignor from perpetrating in a corporate guise the very injustice the doctrine precludes him or her from accomplishing in a personal capacity.

In the present case, however, extending the assignor estoppel doctrine to defendant would not accomplish this goal. Defendant is not Calabria's corporate disguise. Calabria owns an insignificant number of defendant's shares, he does not sit on its board of directors, and he holds no sway over defendant's finances or strategic decisions. Although Calabria is a "Vice President of Research and Development," the record reveals that there are twenty-six "Vice Presidents" in defendant's organizational structure and, far from being second in command as the title suggests, Calabria is subordinate to a "Managing Director of Research and Development." (D.I. 59, Ritchie Decl. ¶ 4)

Moreover, extending the doctrine of assignor estoppel to defendant would punish it for hiring Calabria and using his talents to compete with plaintiff. Assignor estoppel was not designed to prevent companies from competing for talented employees; rather, it was intended to prevent the assignor (whether acting individually or through another entity) from "making [a] representation [of the patent's validity] at the time of assignment (to his advantage) and later ... repudiat[ing] it (again to his advantage)." *Diamond Scientific*, 848 F.2d at 1224; see generally *Franklin D. Ubell, Assignor Estoppel; A Wrong Turn From Lear*, 71 J. Pat. & Trademark Off. Soc'y 26 (Jan.1989) (noting that employees are a considerable source of new competition and new business ventures in high-tech industry). Here, the record as it stands reveals no real advantage that would accrue to Calabria from defendant's assertion of an invalidity defense. Consequently, the equities of this case do not favor

2000 WL 987979

Page 4

(Cite as: 2000 WL 987979 (D.Del.))

a finding of privity between Calabria and defendant. Based on the record presented, the court shall deny plaintiff's motion to estop defendant from raising an invalidity defense.

B. Claim 6 of the '437 Patent

*4 Plaintiff next moves for summary judgment that defendant's accused process literally infringes claim 6 of the '437 patent. [FN1] Defendant cross moves for summary judgment of noninfringement of the same claim.

FN1. Plaintiff does not argue infringement under the doctrine of equivalents.

A finding of literal infringement requires that the asserted claims read on the accused process. See *Morton Int'l, Inc. v. Cardinal Chem. Co.*, 5 F.3d 1464, 1468 (Fed.Cir.1993). A claim covers, or reads, on an accused process if every limitation recited in the claim is found in the accused process. See *Kahn v. General Motors Corp.*, 135 F.3d 1472, 1477 (Fed.Cir.1998). Each limitation of the claim must be met exactly by the accused process, and any deviation from the claim precludes a finding of literal infringement. See *Lantech, Inc. v. Keip Mach. Co.*, 32 F.3d 542, 547 (Fed.Cir.1994). If an express claim limitation is absent from an accused process, there can be no finding of literal infringement as a matter of law. See *Kahn*, 135 F.3d at 1477.

The first step in an infringement analysis requires the court to construe the disputed claims. *Markman v. Westview Instruments, Inc.*, 52 F.3d 967, 979 (Fed.Cir.1995), *aff'd*, 517 U.S. 370 (1996). The principles of claim construction are well established. The exercise begins with the claim language, which defines the scope of the claim. See *York Prods., Inc. v. Central Tractor Farm & Family Ctr.*, 99 F.3d 1568, 1572 (Fed.Cir.1996). In analyzing claim language, the court must employ "normal rules of syntax," *Eastman Kodak Co. v. Goodyear Tire & Rubber Co.*, 114 F.3d 1547, 1553 (Fed.Cir.1997) for "[a] claim must be read in accordance with the precepts of English grammar." *In re Hyatt*, 708 F.2d 712, 714 (Fed.Cir.1983). The court also must ascribe to any technical term used in a claim "the meaning that it would be given by persons experienced in the field of the invention,

unless it is apparent from the patent and the prosecution history that the inventor used the term with a different meaning." *Hoechst Celanese Corp. v. BP Chems., Ltd.*, 78 F.3d 1575, 1578 (Fed.Cir.1996).

Claim 6 of the '437 patent reads as follows:

A method of making a golf ball, comprising:

- a) providing a first mold member for molding material around part of a golf ball core wherein said first mold member comprises a first mold cavity;
- b) providing a mold member alignment unit having alignment members for cooperating with the two side surfaces on the first mold member to align the mold member in a lateral position;
- c) providing a frame unit mounted for vertical movement relative to the mold member alignment unit for moving a golf ball core into the first mold cavity, comprising:
 - i) a core holder for holding the core while it is moved into the first mold cavity; and
 - ii) a stop for limiting the vertical movement of the frame unit;
- d) positioning the first mold member to a predetermined lateral position with the alignment members such that the core holder will center the golf ball core in the first mold member;
- *5 e) placing the golf ball core in the core holder;
- f) placing a first portion of polyurethane in the first mold cavity;
- g) allowing said polyurethane to partially cure to a selected state of gel in said first mold cavity;
- h) moving the frame unit with the core holder and core continuously at a controlled rate towards the polyurethane in the first mold cavity until the core contacts the polyurethane, when the polyurethane is in said selected state of gel, and the core is centered in the first mold cavity;
- i) disengaging the core from the core holder after a selected period of time;
- j) placing such core with the polyurethane while still in said first mold cavity against a second mold member having a second mold cavity containing polyurethane at a selected state of gel therein and mating the two mold members together; and
- k) curing the polyurethane in the mated mold members such that the golf ball cover is substantially free of defects of a type caused by a pin mold, and wherein the core center is substantially concentrically aligned with the golf

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2000 WL 987979

Page 5

(Cite as: 2000 WL 987979 (D.Del.))

ball cover.
(437 patent, col. 8, lns. 41-67 to col. 9, lns. 1-15)

As an initial matter, defendant argues that element b of claim 6 is in means plus function form. Plaintiff vigorously disputes this assertion. Section 112, paragraph 6 of Title 35 provides that a patentee may define the structure for performing a function through the use of a means expression, provided that the patentee discloses a specific structure or structures corresponding to that means in the patent specification. *See* 35 U.S.C. § 112, ¶ 6. [FN2] Where, as here, the word "means" is absent from the claim language, a presumption arises that § 112, ¶ 6 does not apply. *See Kemco Sales, Inc. v. Control Papers Co.*, 208 F.3d 1352, 1361 (Fed.Cir.2000). That presumption may be rebutted if the claim limitation does not recite sufficiently definite structure to perform the claimed function. *See id.* In construing a means plus function claim, the court must look to the language of the claim, the patent specification, and the prosecution history. *See Cybor Corp. v. FAS Techs., Inc.*, 138 F.3d 1448, 1457 (Fed.Cir.1998); *United States v. Teletronics, Inc.*, 857 F.2d 778, 782 (Fed.Cir.1988). At present, neither party included the prosecution history as part of the record. Consequently, neither shall the court determine at this point in the proceedings whether element b of claim 6 is in means plus function form nor further construe claim 6.

FN2. 35 U.S.C. § 112, ¶ 6 reads as follows:

An element in a claim for a combination may be expressed as a means or step for performing a specified function without the recital of structure, material, or acts in support thereof, and such claim shall be construed to cover the corresponding structure, material, or acts described in the specification and equivalents thereof.

The court shall deny without prejudice plaintiff's motion for summary judgment of infringement and defendant's cross motion for summary judgment of non-infringement of the '437 patent.

V. PLAINTIFF'S MOTION FOR SUMMARY JUDGMENT OF INFRINGEMENT OF THE '365 PATENT AND DEFENDANT'S CROSS MOTION

FOR SUMMARY JUDGMENT OF INVALIDITY OF THAT PATENT

In the second set of motions before the court, plaintiff seeks summary judgment that defendant's accused apparatus and process for molding solid golf ball cores infringes claims 1-3 of the '365 patent. (D.I.52) For its part, defendant does not dispute the infringement allegations; however, it seeks summary judgment that the '365 patent is obvious in light of prior art. (D.I.65) Defendant also argues that plaintiff's infringement claim is barred by the doctrine of laches.

A. Infringement of the '365 Patent

*6 Plaintiff argues that defendant's accused core molding apparatus infringes claims 1-3 of the '365 patent. The '365 patent is directed to a method and apparatus for compression molding golf ball cores. Defendant neither denies infringement nor disputes plaintiff's proposed construction of claims 1- 3. (D.I. 65 at 3 n.2) [FN3] Nonetheless, the court shall construe each claim and review the evidence asserted in support of plaintiff's infringement argument. *See Exxon Chem. Patents, Inc. v. Lubrizol Corp.*, 64 F.3d 1553, 1555 (Fed.Cir.1995) (noting that, "the trial judge has an independent obligation to determine the meaning of the claims, notwithstanding the views asserted by the adversary parties").

FN3. "Dunlop has never contended in this action that its present core molding process would not infringe the '365 patent, were that patent valid."

1. Claim 3

Claim 3 reads as follows:

An apparatus for compression molding spherical objects comprising opposed mold plates, each said mold plate having a plurality of half molds therein, each said half mold having a cavity, the plates being movable towards and away from each other and, when together, the cavities of the said half molds of one plate being in registration with the cavities of the said half molds of the other plate, the cavity in each half mold in one of said plates being a portion of a sphere, said portion being a truncated sphere truncated at said

2000 WL 987979

Page 6

(Cite as: 2000 WL 987979 (D.Del.))

mold parting line so as to be of greater than hemispherical dimension and the cavity in each half mold of the other plate being a corresponding remaining portion of said sphere truncated at said mold parting line to be of less than hemispherical dimension whereby said cavities in said one of said plates are undercut for retention of the molded spherical objects, and means for simultaneously mechanically releasing all said spherical objects from the half molds of said one mold plate.

('365 patent, col. 4, lns. 48-66) Claim 3's "opposed mold plates" element requires an upper mold plate positioned above a lower mold plate. Both the upper and lower mold plates contain a plurality of "half molds" that contain "cavities," which hold and shape the core material. When brought together by the apparatus, the "cavities" on the opposing mold plates will form a sphere. However, the hemispherical dimensions of the upper and lower cavities are not equal. Thus, the "mold parting line," where the upper and lower cavities meet, is not at the equator of the molded core material. The "mold parting line" will be either above or below the equator, such that one cavity (either the upper or the lower) will have a greater hemispherical dimension than the other. The cavities with the greater hemispherical dimensions are thereby "undercut for retention of the molded spherical objects." ('365 patent, col. 4, lns. 63-64) As noted in the specification, this allows the molded cores to remain in the mold plate with the larger hemispherical dimension. (See '365 patent, col. 1, lns. 22-44)

The above described mold plates must be "moveable towards and away from each other" in such a fashion that the cavities in the upper and lower mold plates are "in registration." ('365 patent, col. 4, lns. 51-52, 53-54) The common meaning of registration is "bringing [something] together ... in complete agreement with respect to position." *Webster's Third New Int'l Dictionary* 1912 (unabridged ed.1993). Thus, the term "registration" as used in the '365 patent requires that the mold cavities be in alignment with each other when both mold plates are brought together.

*7 Claim 3 also recites a "means for simultaneously mechanically releasing all said spherical objects from the half molds of said one mold plate." ('365 patent, col. 4, lns. 64-66) Because this claim language is expressed in means

plus function format, [FN4] the court must look to the patent specification to "determine what structures have been disclosed ... that correspond to the means for performing that function." *Kemco Sales*, 208 F.3d at 1361. The '365 patent specification discloses several means for performing the function of "simultaneously mechanically" releasing the molded cores. The preferred means employs a vacuum system that lifts the cores out of the mold by forming a vacuum between a rubber boot and the mold surface. ('365 patent, col. 2, lns. 43-68) Although this system is preferred, the specification indicates that it is not essential. (See '365 patent, col. 3, lns. 1-2) The specification also discloses other systems:

FN4. Unlike the alleged means plus function claim element in the '437 patent, there is no dispute that this element of claim 3 is in means plus function form.

For example, the balls could be ejected before the stripper plate and boots are brought into position. Similarly, the stripper plate and boots could be brought into position above the balls but the balls could be ejected before any vacuum is applied.

...
Alternatively a frictional system can be employed by making the rubber boots somewhat larger so they squeeze down over and grip the ball. The balls can then be ejected from the boots by air pressure, ejector pins, or the like. Other removal systems such as gripping fingers, needles, push rods (for horizontal unloading) or magnetic systems (for balls highly loaded with iron filings or the like) can also be employed.

It will also be appreciated that the oversized cavity mold need not be the lower mold but can rather be the upper mold. In this instance, the ejector pins would be in the upper mold plate and would eject the balls downward when the mold plates were parted.

('365 patent, col. 3, lns. 51-63) Figure 2 of the '365 patent depicts the preferred vacuum system along with an ejector pin. Thus, the written description and the accompanying drawing indicate that the disclosed structure corresponding to the "simultaneously mechanically releasing" means is a system employing either a vacuum in combination with an ejector pin or a system employing simply an ejector pin or some other mechanical means such as gripping fingers, needles, or push rods.

2000 WL 987979

Page 7

(Cite as: 2000 WL 987979 (D.Del.))

Given this claim construction, plaintiff's unrefuted evidence establishes that defendant's apparatus infringes claim 3. Plaintiff submitted evidence that defendant's apparatus has mold plates, half molds, and a plurality of cavities. (D.I. 53 Exs. C, D, E, at 200:8-22) The cavities in the upper mold plate of the accused device are of greater hemispherical dimension than the cavities in the lower mold plate. (D.I. 53 Ex. E, at 215:15-22) Thus, these accused upper mold plate cavities are undercut for retention of the molded cores. (D.I. 53 Ex. H, E, at 193:5-18; 203:6-204:2) Furthermore, the upper and lower mold plates of the accused apparatus are moveable towards and away from each other and, once together, the cavities of the half molds in one plate are in alignment, or "in registration," with the cavities of the half molds in the opposing plate. (D.I. 53 Ex. E, at 187:20-188:9; 200:25-201:12) Defendant's accused apparatus also employs "knockout pins" as a "means for simultaneously mechanically releasing" the molded cores. (D.I. 53 Ex. F, E, at 197:9-198:11; 205:13-206:9)

*8 The evidence establishes that defendant's accused apparatus meets every element of claim 3 of the '365 patent. Therefore, plaintiff's motion for summary judgment is granted as to its contention that defendant's apparatus infringes claim 3 of the '365 patent.

2. Claims 1 and 2

Plaintiff also argues that defendant's process infringes claims 1 and 2 of the '365 patent. Claim 1 is an independent method claim that discloses a method of molding objects having a curved outer surface. It reads as follows:

A method of molding objects having a curved outer surface comprising:

(a) forming said object in a mold device, said mold device comprising a first set of half molds positioned in a first mold plate and a second set of half molds positioned in a second mold plate, each said half mold in said first set having a cavity therein and each said half mold in said second set having a corresponding cavity which when placed together define the shape of said object and a mold parting line between the cavities, the cavity in each half mold of said first set having a cross-section at the mold parting line whose dimension is from about 0.5% to about 10% less than the dimension of the greatest cross-section of the object to be molded and forming

thereby an undercut opening of said cavity,

(b) separating said first mold plate from said second mold plate whereby each molded object is retained in the first set of half molds by the undercut opening thereof;

(c) mechanically removing said molded object from said first set of half molds.

('365 patent, col. 4, lns. 25-45) Claim 2 is a dependent claim that teaches, "[t]he method of claim 1 wherein said objects are spherical." ('365 patent, col. 4, lns. 46-47)

The court shall construe the terms of claims 1 and 2 consistent with claim 3. Construed as such and in light of plaintiff's unrefuted evidence, defendant's accused process infringes claims 1 and 2 of the '365 patent. As noted above, this evidence establishes that defendant's process for manufacturing spherical golf ball cores employs upper and lower mold plates, each containing a plurality of half molds with each half mold containing a cavity. (D.I. 53 Ex. E, at 186:3-25) When combined, these cavities define both the shape of the molded core and the "mold parting line" between the cavities. (D.I. 53 Ex. E, at 215:11-19) Further, the upper mold plate cavities in defendant's process have undercut openings. (D.I. 53 Ex. E, at 193:5-18) Plaintiff also submitted evidence that the diameter of one of defendant's cores at its mold parting line is 0.9% less than the diameter of that core at its equator. (D.I. 53 Ex. I, at ¶¶ 6-7) One of plaintiff's experts testified that this indicates that the cross-section at the cavity opening in defendant's apparatus is about 0.9% less than the greatest cross-section of the core. (D.I. 53 Ex. I, at ¶ 7) Thus, defendant's process meets every element of step (a) of claim 1.

There is also unrefuted evidence that, when defendant's upper and lower mold plates are separated, the molded cores remain in the half molds of defendant's upper mold plate (the "first mold plate") due to the undercut openings of the half-molds of that plate. (D.I. 53 Ex. E, at 193:5-18) Consequently, defendant's accused process meets every element of step (b) of claim 1.

*9 Finally, it is undisputed that defendant employs knockout pins to mechanically remove the cores from the upper, "first set" of half molds. (D.I. 53 Ex. E, at 205:13-206:9) Thus, defendant's process meets every element of step (c) in claim 1 and infringes that claim as a matter of law.

2000 WL 987979

Page 8

(Cite as: 2000 WL 987979 (D.Del.))

With respect to claim 2, it is undisputed that defendant's upper and lower half molds form a "spherical" golf ball core. (D.I. 53 Ex. E, at 215:15-22) Accordingly, defendant's process also infringes claim 2 as a matter of law.

B. Defendant's Cross Motion for Summary Judgment of Invalidity

In its cross motion, defendant argues that claims 1-3 of the '365 patent are obvious and, therefore, invalid. Specifically, defendant contends that the prior art teaches compression molds with off-center mold parting lines, or "undercuts," such as those disclosed in claims 1-3 of the '365 patent.

A patent is invalid under 35 U.S.C. § 103

if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains.

The ultimate determination of obviousness is a question of law based on underlying factual inquiries. See *Richardson-Vicks Inc. v. Upjohn Co.*, 122 F.3d 1476, 1479 (Fed.Cir.1997). Those factual inquiries involve consideration of the four so-called *Graham* factors: (1) the scope and content of the prior art; (2) the differences between the claims and the prior art; (3) the level of ordinary skill in the pertinent art; [FN5] (4) and any secondary considerations of nonobviousness, such as commercial success. See *Graham v. John Deere Co. of Kansas City*, 383 U.S. 1, 17-18 (1966); *B.F. Goodrich Co. v. Aircraft Braking Sys. Corp.*, 72 F.3d 1577, 1582 (Fed.Cir.1996). The existence of each element of a claim in the prior art does not, by itself, demonstrate obviousness. Instead, there must be a "reason, suggestion, or motivation in the prior art that would lead one of ordinary skill in the art to combine the references, and that would also suggest a reasonable likelihood of success." *Smith Indus. Med. Sys., Inc. v. Vital Signs, Inc.*, 183 F.3d 1347, 1353 (Fed.Cir.1999). "Such a suggestion or motivation may come from the references themselves, from knowledge by those skilled in the art that certain references are of special interest in a field, or even from the nature of the problem to be solved." *Id.* at 1356.

FN5. The factfinder must evaluate the

invention, "not through the eyes of the inventor, who may have been of exceptional skill, but as by one of 'ordinary skill.'" *Interconnect Planning Corp. v. Feil*, 774 F.2d 1132, 1138 (Fed.Cir.1985).

With respect to the first step in the invalidity analysis, the court's prior construction of claims 1-3 of the '365 patent controls. In support of its obviousness argument, defendant offers the following evidence:

an affidavit from its expert, Dr. Suresh G. Advani, that basic texts in compression molding teach (1) the desirability of retaining the molded object in one of the mold halves and (2) the usefulness of undercuts and ejection devices as a means to do this (D.I. 67, Advani Decl. ¶ 12);

*10 the Lacaze '692 patent, the diagrams of which allegedly depict mold halves with an "undercut" that would hold a molded object in place after compression (D.I.; D.I. 67, Advani Decl. ¶¶ 16-18) and Advani's testimony that the differences between this alleged prior art and the '365 patent are immaterial.

Defendant also asserts that one skilled in the art would find the '365 patent obvious. Defendant argues that one skilled in this particular art would have at least a bachelor's degree in mechanical or chemical engineering. Furthermore, defendant contends that no secondary considerations, such as commercial success, favor plaintiff.

In response, plaintiff offers the testimony of two experts who dispute the existence of an undercut in the Lacaze '692 patent's upper mold cavity. (D.I. 89 Ex. F, Pocklington Decl., at ¶ 5; Ex. H, Roulston Decl., at ¶¶ 11-12) According to these experts, the Lacaze patent does not teach an undercut mold half and, therefore, that patent cannot meet claims 1-3 of the '365 patent. Plaintiff's experts also contend that the compression molding textbook relied upon by Dr. Advani teaches away from the use of undercuts. (D.I. 89, Ex. F, Pocklington Decl., at ¶ 6; Ex. H, Roulston Decl., at ¶ 14-15) Plaintiff's experts also reject defendant's estimation of the qualifications of one skilled in the art. They argue that five to ten years of practical experience, not necessarily a formal degree, would render one skilled in the relevant art of compression molding. (D.I. 89, Ex. H, Roulston Decl., at ¶ 19)

There are, then, several disputed issues of material

2000 WL 987979
(Cite as: 2000 WL 987979 (D.Del.))

Page 9

fact. Consequently, the court shall deny defendant's motion for summary judgment of invalidity.

C. Defendant's Cross Motion for Laches

Defendant contends that the doctrine of laches bars plaintiff's claim of infringement of the '365 patent. Specifically, it argues that plaintiff's delay in bringing suit was "unreasonable and inexcusable" and that this delay caused defendant to suffer material prejudice.

The laches defense is cognizable under 35 U.S.C. § 282 as an equitable defense to a claim of patent infringement. *See A.C. Aukerman Co. v. R.L. Chaides Constr. Co.*, 960 F.2d 1020, 1028 (Fed.Cir.1992). "Where a defense of laches is established, the patentee's claim for damages prior to suit may be barred." *Id.* In *A.C. Aukerman Co.*, the Federal Circuit stated that in order for a defendant to invoke the laches defense, the defendant has the burden to prove two factors:

1. [T]he plaintiff delayed filing suit for an unreasonable and inexcusable length of time from the time the plaintiff knew or reasonably should have known of its claim against the defendant; and
2. [T]he delay operated to the prejudice or injury of the defendant.

Id. at 1032. The defendant must prove both factors by a preponderance of the evidence. *Id.* at 1045. An accused infringer is entitled to a presumption of laches if the infringer can show that the patentee delayed bringing suit for more than six years from the date the patentee knew or should have known of the alleged infringement. *Id.* at 1028, 1037.

*11 The laches defense, which is based on equitable principles, is not governed by the application of "mechanical rules." *Id.* at 1032. The length of time that is "deemed unreasonable and inexcusable has no fixed boundaries but rather depends on the circumstances." *Id.* (citations omitted). Thus, the "court must look at all of the particular facts and circumstances of each case and weigh the equities of the parties." *Id.* The court must also consider the patentee's reasons for delay. *See id.* Some excuses that have been recognized include: "[O]ther litigation; negotiations with the accused; possibly poverty and illness under limited circumstances; wartime conditions; extent of infringement; and dispute over ownership of the patent." *Id.* (citations omitted).

Prejudice may be either economic or evidentiary in nature. *See id.* at 1033 (citations omitted). Economic prejudice "may arise where a defendant and possibly others will suffer the loss of monetary investments or incur damages which likely would have been prevented by earlier suit." *Id.* at 1033. In determining economic damages, the court "must look for a change in the economic position of the alleged infringer during the period of delay." *Id.* The court should also consider whether, if the infringer had notice, it could have switched to a noninfringing product and whether the patentee intentionally waited for damages to escalate. *See id.* Evidentiary prejudice "may arise by reason of a defendant's inability to present a full and fair defense on the merits due to the loss of records, the death of a witness, or the unreliability of memories of long past events, thereby undermining the court's ability to judge the facts." *Id.* (citations omitted).

1. Defendant Is Not Entitled to a Presumption of Laches

A presumption of laches arises if defendant can show that plaintiff knew or should have known of defendant's infringement on or prior to December 17, 1992--six years prior to plaintiff's initiation of its infringement suit. *See A.C. Aukerman Co.*, 960 F.2d at 1028, 1037. Defendant contends that, since 1989, plaintiff has tested the cores of golf balls manufactured by defendant and other competitors. Defendant asserts that some of these golf ball cores had offset mold parting lines and that, therefore, plaintiff knew of defendant's infringement well over six years prior to filing suit.

Evidence exists, however, that prior to 1990 none of defendant's cores had offset mold parting lines. (D.I. 112 at Ex. D) Indeed, defendant admitted that the accused molds went into service only in "late 1990." (D.I. 112, Williams Aff., Ex. C., at ¶¶ 10-13) Obviously, then, plaintiff's tests on defendant's golf ball cores between 1986 and 1990 could not have revealed defendant's infringement of the '365 patent because defendant had not yet begun its infringing process.

Defendant also argues that in late 1991 plaintiff purchased 1100 golf balls (including 49 dozen of defendant's golf balls) and conducted tests on those golf balls that would have revealed defendant's infringement of the '365 patent. (D.I. 68 Ex. H, at A9063-64) According to the documents offered by

2000 WL 987979

Page 10

(Cite as: 2000 WL 987979 (D.Del.))

defendant, these golf balls appear to have been manufactured by a Japanese third-party, not by defendant at its Greenville, South Carolina manufacturing facility where the accused molds were located. Accordingly, this lot of defendant's golf balls could not have revealed infringement of the '365 patent.

*12 Defendant also points to a 1992 "ball audit" listing test results on some of defendant's golf balls. (D.I. 68, Ex. E, at A9242) The tests measured physical properties of the cores such as diameter, weight, specific gravity, hardness, and core color. The audit did not test whether or not the cores exhibited mold parting lines. Nonetheless, defendant argues that one of the cores tested (the core of the Dunlop Maxfli DDH III golf ball) had an obvious offset mold parting line, which plaintiff's technicians would have observed while performing the other tests. [FN6] In support of its assertion that the mold parting line would have been obvious to the naked eye, defendant relies upon disputed evidence that plaintiff's technicians removed the core intact. Plaintiff points to record evidence indicating that its technicians used a method of core extraction that would have left the core severely damaged, thus obscuring the offset mold parting line. (D.I. 112, Morgan Dep., Ex. E, 125:22- 25) [FN7] Because genuine issues of material fact exist with respect to the visibility of this offset mold parting line, defendant is not entitled at this stage of the proceedings to an inference of laches arising from plaintiff's testing of one of defendant's golf balls in 1992.

FN6. The ball audit reveals that the Dunlop Maxfli DDH III had a "grey-white" core. (D.I. 68, Ex. E, at A9242) From this, defendant concludes the core had an offset parting line. This is so, defendant argues, because defendant produced cores using two methods in 1992--one method, which did not use a mold with an offset mold parting line, involved a peach-colored core material and the other method, which produced an offset mold parting line, used a grey-white core. (D.I. 116, Lynch Decl., ¶¶ 3-6)

FN7. "In 1989, we were able to cut a golf ball in half and then into quarters and

thereby remove the cover from the core fragments and thereby separate the core and the cover." (See also D.I. 112, Ex. A, Morgan Dep., at 131:17-19) ("On an occasional basis in the early 1990s, the can opener method [a method for removing the cores intact] was used to remove covers from cores.") It is unclear from the record what method plaintiff's technicians used to extract the core tested in the 1992 ball audit.

2. Defendant Is Not Entitled to a Finding of Unreasonable or Inexcusable Delay

Although a presumption of laches is inappropriate at this stage of the proceedings, this alone does not preclude the possibility of a laches defense. See *A.C. Aukerman*, 960 F.2d at 1038. If defendant can prove unreasonable delay and prejudice based on the evidence of record, it may yet establish laches. See *id.* To this end, defendant argues that routine tests performed by plaintiff on defendant's golf balls during the 1990s would have revealed the offset mold parting line to plaintiff's technicians. [FN8] As noted above, the manner in which the cores were extracted during these tests is in dispute. Further, there is testimony indicating that plaintiff tested its competitors' golf balls only for "performance related" features such as spin and distance. (D.I. 112, Morgan Dep., Ex. A, at 120:20-25) Consequently, the court cannot determine on summary judgment that plaintiff's technicians would have known about the offset mold parting line on defendant's golf ball cores.

FN8. Plaintiff claims that it first learned of defendant's infringement of the '365 patent through an anonymous September 26, 1998 e-mail from a "disgruntled ex-Maxfli employee." (D.I. 112 Ex. A, 164:25-165:16; Ex. B) Only then did it begin examining defendant's golf ball cores for offset mold parting lines.

Defendant also posits that plaintiff had a duty to police its competitors' cores for infringement of the '365 patent and, therefore, that knowledge of infringement should be imputed to plaintiff. According to defendant, if plaintiff had fulfilled its

2000 WL 987979

Page 11

(Cite as: 2000 WL 987979 (D.Del.))

duty to inspect its competitors' golf ball cores for offset mold parting lines, it would have discovered defendant's infringing activities well before 1998.

In support of this assertion, defendant relies on *Wanlass v. General Electric Company*, 148 F.3d 1334, 1338-39 (Fed.Cir.1998). In *Wanlass*, the Federal Circuit affirmed a district court's grant of summary judgment on laches grounds in a case involving a patent for a type of motor used in air conditioners. The district court applied the presumption of laches to the patentee because General Electric ("GE") had "openly made, sold, and marketed" the allegedly infringing devices for over eighteen years before the patentee filed his infringement suit. *Id.* at 1334. Moreover, the patentee "was on [actual as opposed to constructive] notice that GE was a potential infringer" well before he tested GE's air conditioners for infringement. *Id.* at 1340. The Federal Circuit reasoned that these facts "overwhelmingly g[a]ve rise to a duty to investigate GE's possibly infringing activities." *Id.* at 1340.

*13 In the present case, the facts are not nearly as overwhelming. Unlike GE's alleged infringement in *Wanlass*, defendant at bar only began using the infringing process in 1990. After 1990, its infringing process "gradually" replaced its older, non-infringing process. (D.I. 64 at 9; D.I. 66 Ex. A) Moreover, plaintiff had no actual notice that defendant was a potential infringer. Given the factual differences between the present case and *Wanlass*, the court declines to find that plaintiff had a duty to inspect defendant's golf ball cores for possible infringement of the '365 patent.

In several respects, the present case resembles *Wanlass v. Fedders Corp.*, 145 F.3d 1461 (Fed.Cir.1998), where the Federal Circuit reversed the same district court's grant of summary judgment on laches grounds in a related case involving the same patentee. In *Fedders*, the Federal Circuit found disputed issues regarding what the patentee knew, or should have known, of Fedders' allegedly infringing acts. Significantly, the court concluded that it would be unreasonable to impose a duty to inspect the entire market of possibly infringing products where the patented device was used in some, but not all, products in the industry and where the patentee had no particular reason to believe the defendant was infringing the patent. *See id.* at 1465-66. As in *Fedders*, the record at bar

demonstrates that not all golf balls have cores with the patented off-center mold parting line. Indeed, not even all of defendant's golf balls have off-center mold parting lines. Moreover, plaintiff at bar had no more reason to believe defendant infringed the '365 patent than any of its other competitors. *See id.* at 1465. The record at bar simply does not support a conclusion that plaintiff should have inspected all of defendant's golf ball cores for an offset mold parting line.

Viewing the evidence in a light most favorable to plaintiff, the court cannot conclude at this time that plaintiff's delay in filing suit was unreasonable or inexcusable. Accordingly, defendant is not entitled to summary judgment on its laches claim. Because disputed issues of material fact exist with respect to the "unreasonable delay" prong of the laches test, the court need not address the prejudice prong of that test at this time.

V. CONCLUSION

For the aforementioned reasons, the court shall deny plaintiff's motion for summary judgment of validity and enforceability of the '428 and '437 patents and deny plaintiff's motion for summary judgment of infringement of claim 6 of the '437 patent. (D.I.41) The court likewise shall deny defendant's cross motion for summary judgment of noninfringement of claim 6 of the '437 patent. (D.I.56) Further, the court shall grant plaintiff's motion for summary judgment of infringement of the '365 patent (D.I.52) and deny defendant's cross motion for summary judgment of invalidity of that patent and for laches. (D.I.65) An appropriate order shall issue.

2000 WL 987979, 2000 WL 987979 (D.Del.)

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